

REMARKS/ARGUMENTS

The Examiner is thanked for the clarity and conciseness of the Office Action and for the citation of the references which have been studied with interest and care.

Claim Rejections - 35 U.S.C. §§ 102

Claims 11-13 and 16 were rejected under 35 U.S.C. 102(e) as being anticipated by Shapira et al. (US 2003/0162566 A1).

Claim 12 has been canceled.

Shapira et al. discloses a system and method for improving polarization matching on a cellular communication forward link. *These cellular services configure links into fixed coverage areas that provide uniform omni coverage or sector coverage (see [0005] of Shapira et al.).* According to Shapira et al., a polarized state of at least one signal received by a base station (BS) from a mobile station (MS) is described by a set of weighted signal parameters, which are applied to a signal transmitted by a base station such that the transmitted signal substantially matches the polarized state. Shapira et al. addresses the problem of providing “effective polarization matching on forward link transmissions to mitigate transmission losses due to the polarization mismatch between hand-held MSs and BSs.” See [0009] of Shapira et al.

Shapira et al. describes reducing polarization mismatch loss for an antenna having only a data channel. In contrast, Applicants’ antenna tracking technique uses orthogonal polarization in both the data and tracking channels to provide monopulse antenna tracking system designs that *dynamically* track the direction of arrival of a signal in a way that is independent of the polarization of the received signal. Shapira et al. does not relate to antenna signal direction tracking because the cellular networks described in Shapira et al. have a fixed pattern of beam positions and mobile users distributed in cells defined by the fixed antenna patterns comprising the base station. *Further, Applicants’ antenna tracking technique teaches a method to ameliorate antenna tracking in polarization diverse environments that can cause unstable antenna tracking whereas Shapira et al. uses fixed coverage antennas that confines the user within that coverage rather than providing the means to dynamically follow changes in the signal direction.*

At page 2 of the Office Action, it was asserted that Shapira et al. discloses each and every element of claims 11 and 13. The Examiner, in particular, referred to figures 1 and 18 and paragraphs [0008 and 0048] of Shapira et al.

Applicants have again reviewed Shapira et al. and must strenuously reiterate the following point: The cited reference does not disclose a tracking channel. The Examiner has improperly disregarded limitations in Applicants' claims pertaining to a tracking channel (e.g., as shown in FIG. 5 of Applicants' Specification). At least for this reason, the rejection of Applicants' claims is improper.

Mere disclosure in Shapira et al. of polarization-diverse receive antenna elements 102, 104 applied to a diversity combining circuit 106 does not constitute a disclosure or suggestion of the subject matter recited in claims 11, 13 and 16. If Shapira et al. discloses both the tracking channel and data channel limitations recited in Applicants' claims, the Examiner is requested to specifically identify such disclosure.

Further with regard to claim 16, the TDMA system shown in figure 18 of Shapira et al. does not disclose or suggest "a tracking receiver configured to switch between tracking channel inputs...". The TDMA system performs polarization matching sequentially per user in consecutive time-slots. This does not involve switching between tracking channel inputs. ***Additionally, Shapira et al. [0072] addresses multiple user signals in a TDMA format, whereas Applicants' antenna tracking technique follows an individual signal with a much narrower antenna beamwidth providing greatly increased link performance but imposing a need to accurately follow that signals direction to maintain the increased link performance. Thus, Applicants' antenna tracking technique serves to isolate a single signal and respond to directional changes in the signal, features that are not taught by Shapira et al., which instead relates to providing service to multiple users confined to a fixed coverage area without following directional changes of individual users.***

For the reasons discussed above, withdrawal of this rejection is respectfully requested.

CONCLUDING REMARKS

Applicants submit that the application is in condition for allowance. Concurrence by the Examiner and early passage of the application to issue are respectfully requested.

Any additional fees which are required in connection with this communication and which are not specifically provided for herewith are authorized to be charged to deposit account no. 50-0651. Any overpayments are also authorized to be credited to this account.

Respectfully submitted,



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